

SCIENCE.—SUPPLEMENT.

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THE PRESENT WHOLESALE DESTRUCTION OF BIRD-LIFE IN THE UNITED STATES.

IN the bird-world, as elsewhere, the struggle for existence, even under natural conditions, is a severe one, undue increase being held well in check. Birds, and their eggs and young, are not only the natural prey of many predaceous mammals and reptiles, but also of predaceous birds. Squirrels, spermophiles, and mice, although not in a strict sense rapacious, are among the worst natural enemies of the smaller birds, whose eggs and young they seek and devour with avidity; while many birds not usually classed as predatory, as the jays, crows, grackles, cuckoos, and some others, wage unremitted warfare upon the eggs and young of the weaker species. The elements are also far more destructive of bird-life than is commonly recognized. Late cold storms in spring destroy many of the early migrants, sometimes nearly exterminating certain species over considerable areas where they had become prematurely settled for the season. The unusual southward extension of severe cold waves and heavy snow-falls, such as have marked the present winter, are destructive to the bird-life of the regions thus exceptionally visited. During the migrations, both in the fall and spring, immense numbers of birds are sometimes caught by storms, and blown far out to sea and drowned, or perish in attempts to cross the larger inland lakes. There is abundant evidence to show that the annual destruction of birds by the elements alone must prove a severe check upon their increase. But all this is a part of nature's routine, which has characterized past ages as well as the present, and which, so far as we know, may be only the natural and necessary check upon undue increase. It is only when man comes upon the scene that nature's balance is seriously disturbed.

Man's destructive influence is to some extent unavoidable, but in far greater part selfish and wanton. The removal of forests, the drainage of swamps and marshes, the conversion of wild lands into farms, and the countless changes incident to the settlement of a country, destroy the haunts and the means of subsistence of numerous forms of animal life, and practically result in their ex-

termination over vast areas. The birds, particularly the larger species, suffer in common with vertebrate life in general. Electric-light towers, light-houses, and light-ships are also a fruitful and modern source of disaster to birds, particularly during their migrations, when, in thick weather, thousands upon thousands kill themselves by dashing against these alluring obstructions. Telegraph-wires contribute also largely to the destruction of bird-life. While the destruction by these agencies is greatly to be regretted, it is not directly chargeable to cupidity and heartlessness, as is the far greater slaughter of birds in obedience to the dictates of fashion, presently to be detailed.

The history of this country, as is well known, is the record of unparalleled destruction of the larger forms of animal life. Much of this destruction, it is true, was unavoidable, sooner or later. But it is no less true that the extirpation of our larger game animals has been needlessly hastened by what may be fairly termed a disgraceful greed for slaughter, — in part by 'pot-hunting' on a grand scale, in part for the mere desire to kill something, — the so-called 'love of sport.' The fate of extermination, which, to the shame of our country, has already practically overtaken the bison, and will sooner or later prove the fate of all of our larger game-mammals and not a few of our game-birds, will, if a halt be not speedily called by enlightened public opinion, overtake scores of our song-birds, and the majority of our graceful and harmless, if somewhat less 'beneficial,' sea and shore birds.

The decrease in our song and shore birds is already attracting attention; and the protest against it, which reaches us from many and widely distant parts of the country, is not only painful evidence of this decrease, but gives hope that the wave of destruction, which of late years has moved on in ever-increasing volume, has at last reached its limit of extension, and that its recession will be rapid and permanent. But to secure this result, the friends of the birds — the public at large — must be thoroughly aroused as to the magnitude of the evil, and enlightened as to its causes and the means for its retrenchment. It is therefore the purpose of the present series of papers to throw some light upon the extent, the purposes, and the methods of the present wholesale slaughter of our native birds.

Birds are killed for food, for 'sport,' for natural-

history specimens, to stuff as objects of curiosity or ornament, and for personal decoration. The birds killed for food are, of course, mainly the commonly so-called game-birds, — pigeons, grouse of various kinds, ducks and geese, and the great horde of smaller waders, known as 'peeps,' snipes, plovers, rails, etc. The slaughter of these has been so improvident, and their decrease of late so marked, that they are now more or less cared for by the numerous game-protective associations, but are still, in the main, very inadequately guarded. In addition to the birds commonly recognized as game-birds, many song-birds are hunted for food, notably the reed-bird, or bobolink, the robin, the meadow-lark, the blackbird, and the flicker, and, in some localities, all the larger song-birds. This is particularly the case in portions of the south, where strings of small birds may be seen suspended in the game-stalls. In March of last year, a well-known ornithologist reports finding in the market at Norfolk, Va., hundreds of woodpeckers and song-birds exposed for sale as food, the list of species including not only robins, meadow-larks, and blackbirds, but many kinds of sparrows and thrushes, and even warblers, vireos, and wax-wings. While some of the stalls had each from three hundred to four hundred small birds, others would have but a dozen or two. "Nearly all the venders were colored people, and doubtless most of the birds were captured by the same class." This 'daily exhibition in southern markets' indicates an immense destruction of northern-breeding song-birds which resort to the southern states for a winter home.

As shown in a subsequent paper of this *Supplement*, the eggs of many species of terns, gulls, plovers, and other marsh and shore breeding species, are systematically taken for use as food, the egg-hunting business being prosecuted to such an extent as to prove a serious cause of decrease of the species thus persecuted, while the value as food, of the eggs thus destroyed, is too trivial to be for an instant regarded as of serious importance. The havoc described below by Mr. Sennett as wrought in Texas prevails all along our coast-lines; and many localities might be cited where the destruction is equally sweeping, as on the Pacific coast and at frequent points on the Atlantic coast from Florida to Labrador, — wherever, in fact, the birds occur in sufficient numbers to render such wholesale plundering practicable. The marsh-breeding rails are at some localities subject to similar persecution. At one locality on Long Island, I am informed, a 'bay-man,' who keeps a house of entertainment for sportsmen during 'the season,' supplies his table for weeks at a time with the eggs of the rails that breed numerous in his vicinity,

— in strange conflict, too, with his own interests, since, by destroying the eggs of the rails, he 'kills the goose that lays the golden egg' for the rail-shooting season.

In general, the game and quasi-game birds are killed for sport rather than for gain or for their intrinsic value as food: exception, however, is to be made of the 'professional' or 'market' gunners, by whom the ranks of the water-fowl are so fearfully thinned, and who often resort to any wholesale method of slaughter their ingenuity may be able to devise. But the slaughter of our birds in general is doubtless largely due to the mere fascination of 'shooting.' Many song-birds are killed 'for sport' by the 'small boy' and the idler, whose highest ambition in life is to possess a gun, and whose 'game' may be any wild animal that can run or fly, and wears fur or feathers. Some slight depredation on the small fruits of the garden, or on field-crops, is ample pretext for a war of extermination on robins, catbirds and thrashers, jays and chewinks, as well as black-birds and crows, and the birds so unfortunate as to fall into the category of hawks and owls, notwithstanding the fact that every one of these species is in reality a friend. Yet the slaughter is winked at, if not actually encouraged, by those who are most injured by it; while the 'general public' of the districts where such practices prevail are either too ignorant of the real harm done, or too apathetic, to raise any serious protest.

Among the important agencies in bird-destruction is the 'bad small boy' — and in the ornithological sense his name is legion — of both town and country. Bird-nest robbing is one of the besetting sins — one of the marks of 'natural depravity' — of the average small boy, who fails to appreciate the cruelty of systematically robbing every nest within reach, and of stoning those that are otherwise inaccessible. To him the birds themselves, too, are also a fair target for a stone, a sling, a catapult, or a 'pea-shooter:' to the latter many a sparrow, a thrush, or warbler falls a victim. Says a recent writer on the subject of bird-destruction, "Two ten-year-old lads in that quiet and moral hamlet [Bridgehampton, Long Island] confessed this autumn, that with pea-shooters they had killed during the season fifty robins and other birds which frequent the gardens, orchards, and cemetery. Such boys exist all over the United States, and war on birds as things made to be killed. . . . The pea-shooter gives no sound, and can be carried in the vest-pocket; but so destructive is it in the hands of a skilful child, that the legislatures of some of the western states were obliged to pass laws making

the sale of the thing a misdemeanor, and punishing the possession or use of it."

Perhaps equally, possibly more destructive, and certainly more reprehensible, is the newly-arrived 'foreign-born citizen,' who, to demonstrate to himself that he has really reached the 'land of the free,' equips himself with a cheap shot-gun, some bird-traps, clap-nets, or drugged grain, one or all, and hies himself to the nearest haunt of birds for indiscriminate, often very quiet, slaughter or capture. Of course, only a few of our guests from foreign shores either possess or indulge in this propensity; but in the neighborhood of our larger cities, notably on Long Island, and elsewhere near New York, the destruction of bird-life thus effected, we are credibly informed, is startlingly large.

The destruction of birds by taxidermists, and for alleged 'scientific purposes,' has justly attracted attention, and has unjustly brought into disrepute the legitimate collecting of both eggs and birds for scientific use; but much of this alleged scientific collecting is illegitimate, being really done under false colors, or wrongly attributed to science. Of the birds killed or mounted by taxidermists, some, not unfrequently a large part, are for museums or private cabinets: another large share is put up for parlor or hall ornaments, either as groups or singly. All this, by a little license, may be allowed as legitimate, or at least not seriously reprehensible. But, unfortunately, the average taxidermist has too often an unsavory alliance with the milliner, and, in addition to his legitimate work, is allured into catering on a large scale to the 'hat-trade.' Although a few of them are too high-principled and too much the naturalist at heart, to thus prostitute their calling, taxidermists as a class are at present in deserved disrepute, and are to a large degree responsible for much of the public and mistaken criticism of scientific collecting. This criticism is perhaps more especially directed against the 'egg-collector,' who ranges in calibre and purpose from the schoolboy, who gathers eggs as he does postage-stamps or 'show-cards,'—for the mere purpose of 'making a collection,'—to the intelligent oölogist or ornithologist, who gathers his eggs in sets, prepares them with great care, with the strictest regard to correct identification, and in series sufficient to show the range of variation—often considerable—in eggs of the same species, and takes a few additional sets for exchange. He may have in the aggregate a large collection, numbering hundreds of species, and thousands of specimens; but in general the same species is not laid under serious requisition, and the sets are gathered at considerable intervals of time and from a large

area of country. A squad of street-urchins set loose in the suburbs will often destroy as many nests in a single morning's foray as a collector gathering for strictly scientific purposes would take in a whole season, and with far more harmful results, because local and sweeping. Much of the egg-collecting by schoolboys should be stopped, and can be easily checked under proper statutory regulations, as will be explained later in a paper on bird-legislation.

The scientific collector, as already intimated, is charged, in some quarters, with the 'lion's share' of the responsibility for the decrease of our song-birds; with what justice, or rather injustice, may be easily shown, for the necessary statistics are not difficult to obtain. The catalogue of the ornithological department of the national museum numbers rather less than 110,000 bird-skins. This record covers nearly half a century, and the number of specimens is four times greater than that of any other museum in this country; while the aggregate number of all our other public museums would probably not greatly exceed this number. But to make a liberal estimate, with the chance for error on the side of exaggeration, we will allow 300,000 birds for the public museums of North America, one-half of which, or nearly one-half, are of foreign origin, or not North American. To revert to the national museum collection, it should be stated, that, while only part of the specimens are North American,—say about two-thirds,—they represent the work of many individuals, extending over a third of a century, and over the whole continent, from Alaska and Hudson Bay to Mexico and Florida, and from the Atlantic to the Pacific. Furthermore, this number—110,000, more or less—is not the number now in the national collection, which is far less than this, thousands and thousands of specimens having been distributed in past years to other museums in this country and abroad.

So far the public museums: now in relation to private cabinets of bird-skins. Of these it is safe to say there are hundreds scattered throughout the country, containing from three hundred to five or six hundred specimens each, with a few, easily counted on the fingers of the two hands, if not on a single hand, numbering five or six thousand each, with possibly two approaching ten thousand each. Probably 150,000 would be a liberal estimate for the number of North American bird-skins in private cabinets, but, again to throw the error on the side of exaggeration, let us say 300,000,—not, however, taken in a single year, but the result of all the collecting up to the present time, and covering all parts of the continent. Add this number to the number of birds in our

public museums, less those of foreign origin, and we have, allowing our exaggerated estimates to be true, less than 500,000 as the number of North American birds thus far sacrificed for science. The few thousand that have been sent to other countries in exchange for foreign birds can safely be included under the above estimate, which is at least a third above the actual number.

We have now passed briefly in review all the agencies and objects affecting the decrease of our birds, save one, and that the most important — many times exceeding all the others together, — the most heartless and the least defensible, namely, the sacrifice of birds to fashion, for hat ornamentation and personal decoration. Startling as this assertion may seem, its demonstration is easy.

In this country of 50,000,000 inhabitants, half, or 25,000,000, may be said to belong to what some one has forcibly termed the 'dead-bird wearing gender,' of whom at least 10,000,000 are not only of the bird-wearing age, but — judging from what we see on our streets, in public assemblies and public conveyances — also of bird-wearing proclivities. Different individuals of this class vary greatly in their ideas of style and quantity in the way of what constitutes a proper decoration for that part of the person the Indian delights to ornament with plumes of various kinds of wild fowl. Some are content with a single bird, if a large one, mounted nearly entire: others prefer several small ones, — a group of three or four to half a dozen; or the heads and wings of even a greater number. Others, still, will content themselves with a few wings fancifully dyed and bespangled, or a wreath of grebe 'fur,' usually dyed, and not unfrequently set off with egret-plumes. In the average, however, there must be an incongruous assemblage made up of parts of various birds, or several entire birds, representing at least a number of individuals. But let us say that these 10,000,000 bird-wearers have but a single bird each, that these birds may be 'made over' so as to do service for more than a single season; and still what an annual sacrifice of bird-life is entailed! Can it be placed at less than 5,000,000? — ten times more than the number of specimens extant in all our scientific collections, private and public together, and probably a thousand times greater than the annual destruction of birds (including also eggs) for scientific purposes.

Fortunately, perhaps, the supply of bird-skins for decorative purposes is not all drawn from a single country, the whole world being laid under tribute. The ornithologist recognizes in the heterogeneous groups of birds on women's hats, met with on every hand, a great preponderance of

North American species; but with them are many of the common birds of Europe, and a far greater variety from South America, and many from Africa, Australia, New Guinea, and India. But, on the other hand, it is well known that our own birds are exported in immense numbers to Europe; but, whether the exportation exceeds the importation, it is impossible to determine, from lack of proper statistics.

With the foregoing facts before us in regard to the annual destruction of our birds, it is no longer surprising that many species, and even genera, of birds, are fast disappearing from our midst. Considering that this slaughter has been waged for years, but with rapid increase year by year, is it not rather a wonder that so many birds are still left?

The extent to which this destruction is carried on, and in what ways, in the immediate vicinity of New York, is indicated in a subsequent article of this series, by Mr. Dutcher. But the slaughter extends in greater or less degree throughout the country. The destruction of 40,000 terns in a single season on Cape Cod for exportation, a million rails and reed-birds (bobolinks) killed in a single month near Philadelphia, are facts that may well furnish food for reflection. The swamps and marshes of Florida are well known to have recently become depopulated of their egrets and herons, while the state at large has been for years a favorite slaughter-ground of the milliner's emissaries. The present winter parties organized and equipped in this interest are said to be prosecuting the same wholesale warfare against the birds at various points along the whole gulf-coast.

But why, some may be supposed to ask, should the slaughter be interfered with? Does it not yield profit to many an impecunious idler, who receives so much per head from the 'taxidermist' for the freshly killed bird? Do not their preparation and manufacture into the gaudy or otherwise untasteful hat-gear give employment to many a needy hand, and add materially to the milliner's gains? Why is not their use for personal decoration, *à la sauvage*, as legitimate and defensible as their use for food, with the added advantage of being able to utilize decoratively a great many species otherwise of no commercial value? Why should we be anxious to preserve our birds? Are they, when alive, of any practical value, or do they contribute in any way to our pleasure or well-being?

In regard to the first of these inquiries, the men and boys really get little more in the average for the raw material than enough to pay them for their powder and shot: it is the 'sport' that

affords them their real reward. The middle-men, — the skimmers and manufacturers, — and an occasional professional gunner, make most of the profit, which must be more or less considerable to induce them to run the gauntlet of public opinion and the occasional risks of prosecution in their illegal enterprises. The milliner shares, of course, in the profits of the trade in such supplies; but, if birds were not used to such an extent, other and more fitting decorations would be adopted in their place, and their business would not suffer.

Respecting the latter inquiries, birds may be said to have a practical value of high importance and an aesthetic value not easily overestimated. Birds in general are the friends of man, and it is doubtful whether a single species can be named which is not more beneficial than harmful. The great mass of our smaller birds, numbering hundreds of species, are the natural checks upon the undue multiplication of insect-pests. Many of them rarely make use of other than insect-food, while all, as shown by scientific investigations already made, depend largely or wholly, during considerable periods of the year, upon an insect-diet. Even the ill-reputed hawks and owls prey upon field-mice, grasshoppers, and other noxious insects or vermin, some never molesting the farmer's poultry, and others only exceptionally. In the present general summary of the subject, it may be sufficient to say, that, while the beneficial qualities of birds vary widely with the species, none can be set down as proven to be unmitigatedly injurious. With the decrease of birds at any point is noted an increase of insects, especially of kinds injurious to agriculture. The relation of birds to agriculture has been studied as yet but imperfectly; but results could be cited which would go far to substantiate the above statement of their general utility. It is a matter for congratulation, that the investigation of the subject has now been systematically entered upon by the department of agriculture at Washington, under the supervision of experts especially fitted for the work.

Birds, considered aesthetically, are among the most graceful in movement and form, and the most beautiful and attractive in coloration, of nature's many gifts to man. Add to this their vivacity, their melodious voices and unceasing activity, — charms shared in only small degree by any other forms of life, — and can we well say that we are prepared to see them exterminated in behalf of fashion, or to gratify a depraved taste? Says a recent writer, "A garden without flowers, childhood without laughter, an orchard without blossoms, a sky without color, roses without perfume, are the analogues of a country without song-birds.

And the United States are going straight and swift into that desert condition."

Indeed, as previously noted, there is already an encouraging recognition of that fact. Here and there bird-protective associations are being formed, and more care is taken to secure proper bird-protective legislation; but the public at large is still too apathetic, or too ignorant of the real state of the case, to insist upon, and support by proper public sentiment, the enforcement of legislative acts already on our statute-books. The American ornithologists' union has moved in the matter by the appointment of a large and active committee on bird-protection, which is at present bending its energies toward the diffusion of information among the people, in the hope of awakening a healthy sentiment on the subject, and is also working to secure not only more effective and intelligent legislation, but the proper enforcement of the laws enacted in behalf of birds. This, too, notwithstanding a recent writer in a popular magazine characterized ornithologists as being among the worst enemies birds have, and to whose egg-collecting and bird-stuffing propensities was principally attributed the woful decrease of our song-birds!

In England the same rage for hat decoration with dead birds has gone so far that anti-plumage-wearing societies have already been established by the more intelligent women of that country; and it has already been suggested, apparently independently of any similar action abroad, by ladies themselves, that the women of this country throw their influence in a similar way against the barbarous custom of using birds for personal decorations. Much could doubtless be done in behalf of the birds in this way; for, once let it come to be considered vulgar and in 'bad form' to thus decorate one's person, and the power of fashion would be a mighty weapon in defence of the birds.

Of all the means that may be devised for checking the present wholesale bird-slaughter, the awakening of a proper public sentiment cannot fail of being the most powerful. Without this, all other means would prove, to a great degree, ineffectual. Laws, however good, cannot be enforced unless backed by public opinion. To arouse this, it seems only necessary to enlighten the community respecting the nature, the enormity, and the leading cause of this great evil. The following articles are intended to amplify and elaborate points merely hinted at in this general statement — to give a bill of particulars for certain special localities, and of certain phases, of this great slaughter of the innocents, and to show the methods adopted by some of the miscreants engaged in it.

J. A. ALLEN.

DESTRUCTION OF BIRDS FOR MILLINERY PURPOSES.

It is difficult to gather the actual statistics of bird-slaughter for millinery purposes, since it can be done only at the expense of much time and labor. We see on every hand—in shop-windows, on the street, in the cars, and everywhere where women are seen—evidence of its enormous extent. We know also that it is carried on more or less almost everywhere, but especially in the neighborhood of the larger cities, or at points within easy access from them, and also at various distant points, which are visited by the millinery taxidermists or their agents for the express purpose of supplying the demands of the hat-trade in bird-skins. At present only a few specific details can be given, relating to only a few localities; but these may be taken as illustrative of what actually occurs at many points, respecting which the facts are known only in a general way. For many of the data here given, we are indebted to statements published from time to time in *Forest and stream*, the well-known New York weekly journal devoted to field-sports and natural history. In an editorial on 'The destruction of small birds,' published a short time since (March 6, 1884), occurs the following: "We know, for example, of one dealer . . . who, during a three-months' trip to the coast of South Carolina last spring, prepared no less than 11,018 bird-skins. A considerable number of the birds killed were, of course, too much mutilated for preparation, so that the total number of the slain would be much greater than the number given. The person referred to states that he handles, on an average, 30,000 skins per annum, of which the greater part are cut up for millinery purposes." The same article, in referring to the destruction of birds for millinery purposes on Long Island, states, that, during the short period of four months, 70,000 were supplied to the New York dealers from a single village.

A writer in the *Baltimore Sun*, of about the same date, gives some account of the destruction of birds at Cobb's Island, on the coast of Virginia. He says, "An enterprising woman from New York has contracted with a Paris millinery firm to deliver during this summer 40,000 or more skins of birds at forty cents apiece. With several taxidermists she was carrying out the contract, having engaged young and old to kill birds of different kinds, and paying them ten cents for each specimen not too much mutilated for millinery purposes. . . . The birds comprised in this wholesale slaughter are mainly the different species of gulls and terns, or sea-swallows, of which many species in large numbers could formerly be found upon this island. But now only few of these graceful birds remain

upon Cobb's Island itself; and the pot-hunters, or rather skin-hunters, have to go to some distance to carry out their cruel scheme. If we consider, that, with each old bird killed,—and only old birds have a suitable plumage,—also many of the young birds, still unable to take care of themselves, are doomed to starvation, this wholesale slaughter becomes still more infamous and criminal."

Cobb's Island was formerly one of the most noted resorts of the terns, smaller gulls, and other shore-breeding birds along our whole coast; but recent visitors to the island report that the once populous colonies of these birds have been almost completely exterminated by the wholesale slaughter referred to by the writer of the foregoing extract.

Similar butchery has been carried on along the sandy shores of Cape Cod, also formerly a noted resort of these birds; it being reported that 40,000 terns were killed there in a single season by one party for the hat-trade. At points where, a few years since, these beautiful birds filled the air with their graceful forms and snowy plumage, now only a few pairs remain.

The same sad havoc has been wrought with the egrets and herons along our southern shores, the statistics of which, could they be presented, would be of startling magnitude. We only know that colonies numbering hundreds, and even thousands, of pairs, have been simply annihilated—wholly wiped out of existence—in supplying the exhaustless demand for egret-plumes. The heronries of Florida suffered first and most severely; later the slaughter was extended to other portions of the Gulf coast. As an instance of the scale on which these operations are carried, it may be mentioned that one of our well-known ornithologists, while on an exploring tour in Texas, heard an agent of the millinery trade soliciting a sportsman to procure for him the plumes of 10,000 white egrets. Although, in the present case, the sportsman had too much humanity to become the abettor of such a heartless scheme, the incident serves to show on what a grand scale the destruction of these birds is attempted; and doubtless the agent did not fail of eventually securing his coveted plunder.

Among the birds most in favor for hat decoration are the various species of grebes, whose soft, furry plumage is particularly adapted to the purpose, being of durable texture, pleasing in effect, and susceptible of being readily dyed any desired tint. Grebes are used to such an extent, that the source of the abundant supply was not at first evident, owing to the comparative scarcity of the birds in the Atlantic states. It is found, however, that the supply is derived from the far west, mainly from

the Pacific slope, where these birds are more abundant, and whence their skins are brought east in bales, like the peltries of the furrier, or the 'robes' of the bison. The number must range far into the tens, if not hundreds, of thousands annually.

Among the smaller birds it is naturally the brighter colored species that furnish most of the victims, especially the orioles, tanagers, grosbeaks, cedar wax-wings, bluebirds, meadow-larks, and golden-winged woodpeckers. No even approximate estimate can be given of the number sacrificed. Only their conspicuous abundance on hats and bonnets, and their greatly decreased numbers, attest the slaughter to which they are subjected. But scarcely a bird can be named — from the rarest to the commonest, from the plainest of the sparrows to the most gorgeously arrayed denizens of the orchard and forest, from the tiniest warblers and humming-birds to jays, kingfishers, cuckoos, and the larger woodpeckers, and even ptarmigans and grouse (in fragments or entire), and the largest of the shore-birds, with bills half a foot in length (an *outré* and grotesque effect seeming to be sometimes especially sought) — that is not to be met with as an appendage of the female head-dress.

The assemblage of diverse and incongruous forms sometimes met with on the same hat is often striking in the extreme; birds from the opposite ends of the earth, and of the ornithological scale of classification, being brought into most inharmonious combination, viewed even from the artistic stand-point. Bearing on this subject, and illustrating the range of taste in such matters, as well as the extent to which birds are used for hat embellishment, may be given the following inventory, furnished by an ornithological friend, of what recently met his eye in a Madison Avenue horse-car in this city. The car contained thirteen women, of whom eleven wore birds, as follows: (1) heads and wings of three European starlings; (2) an entire bird (species unknown), of foreign origin; (3) seven warblers, representing four species; (4) a large tern; (5) the heads and wings of three shore-larks; (6) the wings of seven shore-larks, and grass-finches; (7) one-half of a gallinule; (8) a small tern; (9) a turtle-dove; (10) a vireo and a yellow-breasted chat; (11) ostrich-plumes. That this exhibition was by no means exceptional as to number or variety is obvious to any one who has given close attention to the ornithological displays one daily meets with in street-cars and elsewhere, wherever he may travel.

Advertisements in newspapers, by milliners, of the stock in hand, also give some suggestions of the extent of the traffic in wings and bird-skins; it being not uncommon to see thousands of wings

(plain or fancy, in natural colors or dyed), as well as thousands of bird-skins (mounted or made up) and thousands of plumes (dyed or plain), advertised by a single dealer, while the dealers themselves number hundreds, if not thousands, in each of our larger cities. Add to these the smaller shops, in country and city, throughout the land, and we get at least some comprehension of the extent of the traffic in birds by the milliners, and the support they receive from the feminine portion of our population.

Respecting the traffic abroad, we learn from an English authority, that there were sold in one auction-store in London, during the four months ending April, 1885, 404,464 West Indian and Brazilian bird-skins, and 356,389 East Indian, besides thousands of Impeyan pheasants and birds-of-paradise.

DESTRUCTION OF BIRD-LIFE IN THE VICINITY OF NEW YORK.

To such an extent has the recent fashion of using birds for hat ornaments been carried, that the waters and beaches in this vicinity have been entirely depopulated of their birds. On the coastline of Long Island the slaughter has been carried to such a degree, that where, a few years since, thousands and thousands of terns were gracefully sailing over the surf-beaten shore and the wind-rippled bays, now one is rarely to be seen.

The demand for sea-birds of white or delicate shades of color was so great, that many of the professional gunners and market-shooters gave up their usual shooting to enter upon what has proved to be a war of extermination. So long as the taxidermists who work for milliners in the large cities would take all the birds that could be supplied, the gunners were shooting day after day, from daylight until dark.

In the spring of 1884 the writer met a taxidermist from New York city, who was then on a trip along the south side of Long Island, for the purpose of making contracts with the gunners to supply him with a certain number of birds in the flesh, per day. He had facilities for making up three hundred skins daily, and was trying to arrange to get that number of birds. In answer to an inquiry as to whether he could find a market for such a number of skins in New York, he replied that he had no local trade, but that his stock was entirely for export to France.

Between Coney Island and Fire Island inlet there are many marshes, meadows, and low-lying islands, which for years have been the breeding-places of thousands of common terns or sea-swallows; and on the sandy beaches the least

tern and piping plover laid their eggs, and hatched their young. Now this long stretch of country is as a waste place, for the hand of the destroyer has left but lone remnants of what was once a teeming colony.

The small hamlet of Seaford is near the centre of this district, and has contributed largely toward the extermination of the sea-swallows. One of the most active gunners of this place informed the writer that he and his associates had, during the early summer of 1883, sent to market over three thousand terns. The slaughter of these thousands for hat ornamentation is in itself a great evil; but when we consider that the fifteen hundred pairs killed would have each produced an average of two young, or an aggregate of three thousand additional birds during the season, it becomes evident that the wrong is far-reaching.

In the vicinity of Moriches, L.I., the same character of marsh prevails, and the same destruction of seabird-life has been carried on. One of the resident gunners states that the terns are now practically exterminated, while a few years since it would have been an easy matter to shoot fifty birds during a forenoon. An observer at the eastern end of Long Island informs me that the 'summer gulls' (common terns) have greatly decreased in numbers, and the few that are left have become very wild, and difficult of approach.

The sportsman-poet, Isaac McLellan of Greenport, L.I., in a recent communication, states as follows: "There are many gunners (not sportsmen) whose whole business seems to be to kill off the little vocalists, solely for the sake of disposing of their skins and feathers for the ornamentation of ladies' bonnets. If those good women only knew of the destruction of bird-life that their love for finery occasions, I think they would make it unfashionable to wear the feathers of murdered birds. These gunners point their weapons chiefly at the gulls that haunt our shores, and I hear that they sell them by thousands to the New York dealers, at good prices. Formerly I used to see these pretty flutterers in countless flocks along the bay and seashores, but now they seem to be almost extinct. The bluefish fishermen tell me that this is a serious evil to them, as formerly, when they saw these hovering flocks, they knew that the bluefish were there, and could be easily secured. These bird-exterminators also declare bloody war against most other fine-plumaged birds, and gather in the robin, the oriole, the blackbird, the meadow-lark, catbird, and nearly all other kinds of birds."

As already intimated, the slaughter is not confined to sea-birds alone, but is waged with the same destructive force against the more beautiful

of the land-birds. One gunner informed me that during the winter of 1883 he shot for a middle-man over a thousand cedar-birds (*Ampelis cedrorum*). If they had been permitted to live until the next season of reproduction, it is fair to assume that each pair would have reared an average of five young, or an aggregate of twenty-five hundred birds. It is a well-known fact that cedar-birds are very voracious eaters, and feed almost exclusively, during some months of the year, on the span-worm, canker-worm, and small caterpillars. The damage done the agricultural interests of the country by the destruction of these birds is enormous; but, when we multiply it by the hundreds of thousands that have been shot for the same purpose, the damage is beyond calculation.

An observer in Long Island City states, that, in his vicinity, every bird of bright plumage, such as warblers, woodpeckers, thrushes, orioles, etc., is shot for millinery purposes. In New Jersey the same wholesale destruction of bird-life was carried on, until, as I am informed by the Hon. John W. Griggs, president of the New Jersey senate, "The complaint came up from all parts of the state, of the decrease in the number of song and shore birds. Representation was made to me that certain persons had contracts to furnish birds by the thousands to taxidermists in Philadelphia and New York, and that they proposed to gather their skins in New Jersey. The bill introduced into our legislature for the protection of the birds, passed with only one negative vote, and the effect in my own locality [Paterson] has been excellent."

Another informant states, that, during the summer of 1882, taxidermists were stationed at Barnegat and Beach Haven, N.J., purchasing from the natives every thing in the nature of a sea-bird. Terns of all kinds brought ten cents each, and shore-birds the same price. Many of the bay-men gave up sailing pleasure-parties, and became gunners, because this business was more remunerative; as high as fifty dollars, representing five hundred lifeless birds, being made in a week by some. "One cannot help noticing now the scarcity of terns on the New Jersey coast, and it is all owing to the merciless destruction." Besides the birds already mentioned as being immolated on the altar of fashion, thousands of crows, purple grackles (commonly known as crow blackbirds), red-winged blackbirds, and snow-buntings, are used for this purpose.

A New York taxidermist informed me that he had in his shop thirty thousand bird-skins of the species just mentioned, made up expressly for millinery purposes. Should the gunners and taxidermists bear the whole blame? I think not, as they are only supplying the demand created by

the female love of ornament. Take up any daily or fashion paper, and one can see such items as the following, clipped from the *New York Sun* of Dec. 13 and 20, 1885: "Miss Brady looked extremely well in white, with a whole nest of sparkling, scintillating birds in her hair, which it would have puzzled an ornithologist to classify," and "Mrs. Stanton Whitney had her gown of unrelieved black looped up with blackbirds; and a winged creature, so dusky that it could have been intended for nothing but a crow, reposed among the curls and braids of her hair." It is said, 'Where ignorance is bliss, 'tis folly to be wise.' Perhaps, if the lady in question could have seen the crow during its lifetime perched upon and feeding on the decaying carcass of a horse, she might have objected to the association.

On the other hand we quote from the *London Truth* an item showing the humanity of England's queen: "I am glad to hear that the queen contemplates issuing a ukase censuring the barbarous fashion which so many women have lately adopted, of wearing the bodies of birds, or parts of their bodies, in bonnets and hats and on dresses. Her majesty strongly disapproves of this practice, which of late has greatly increased, which is daily increasing, and which most assuredly ought to be abolished."

As long as the ladies continue to demand birdskins for ornamental purposes, so long will the gunners and taxidermists undertake to supply the market, therefore the initiative in the movement for the protection of birds must be with the 'wives, sweethearts, and mothers,' and not alone with the laws and lawmakers.

WILLIAM DUTCHER.

DESTRUCTION OF THE EGGS OF BIRDS FOR FOOD.

Few persons living at a distance from the seashore have any idea of the immense destruction of bird-life by residents of the coast, who make the systematic and wholesale robbery of water-birds of their eggs a yearly pastime. A thoughtless and relentless warfare has been waged, until extermination of all bird-life on our shores stares us in the face. This destruction has been carried to such an extent, that many of our water-birds, such as gulls, terns, herons, and shore-birds, have become scarce where formerly numberless thousands added life and beauty to our harbors and beaches. The shooting of these beautiful and graceful ornaments of our water-ways for millinery purposes is undeniably one cause of their decrease; but, great as is this cause, it is in no degree comparable to the destruction made by the

so-called 'egggers,' in their annual forays in the name of food-hunting.

My scientific explorations during the last ten years have taken me to many of the breeding-places of various species of water-birds; and some facts which have come under my observation, illustrating how the few birds still to be found along our extensive coast-lines are gradually succumbing to the slaughter, may prove of interest. There is probably not a port, pass, or bay on the entire coast of Texas, whose inhabitants do not regularly devote several days each year to what they term 'egging.' As soon as the 'scouts' or fishermen report the birds established, and laying their eggs on the islands and secluded beaches, all work is suspended, every craft is pressed into service, and everybody is off to assist in the ghastly sport at the breeding-grounds. Arrived at the desired locality, the first day's work is that of thoroughly destroying every egg already laid; and this ruthless sacrifice of thousands of eggs is made before any are secured by the robbers, that they may avoid carrying away any partially incubated ones. Returning to their boats after this work of destruction, the perpetrators remain in hiding, or quietly sail about the lagoons, until the next day, by which time the distracted birds that had not laid their full complement of eggs when frightened away by the intruders, and who had meantime been hard pressed to deposit their treasures, will have laid many thousands of eggs in the very face of destruction. Two or three days are now devoted to gathering the freshly-laid eggs, and to stowing them away in barrels and tubs in the boats. All eggs, from an inch in diameter upwards, are taken, excepting, perhaps, those of the pelican, whose eggs are too fishy for any stomach. I have known of boats which came a distance of over a hundred miles to reef gather these eggs, cruising from reef to reef until they had secured a good load. For days after the return from these expeditions, the shops along the coast expose quantities of bird's eggs for sale, which are disposed of cheaply, according to size. As these eggs of wild birds are much more fragile than those of domestic fowls, a very large proportion of them are broken by the rough handling they receive before they reach the markets. No doubt more eggs are thus wasted than are eaten; and, unless one is familiar with the breeding-places of these birds, no idea can be formed of the appalling extent of this yearly destruction. I examined, before the egggers had reached it, one of a group of grassy islands or flats, about the size of a city block, on which were breeding not less than ten thousand birds, consisting chiefly of gulls, terns, and herons:

and, as each pair lays three or four eggs, here were at least fifteen or twenty thousand eggs on one small island. Now, when one remembers that there are hundreds and probably thousands of such resorts, where the birds are annually robbed, what must be the havoc, the cruelty, and the unwarrantable sacrifice of these harmless birds! Is it any wonder that the birds are shy, and hate the very sight of man? Is it not about time that the bird's side of the question was not only defended, but strenuously championed? The effect of this heartless and cold-blooded trampling upon the domestic instincts of birds is not calculated to encourage amicable and social relations between them and man, but quite the contrary, as the following observation will show.

I have seen laughing gulls, and royal and Caspian terns, upon being driven from their nests, deliberately dash at, and destroy with their bills, every egg exposed in the vicinity of their nests, not excepting those of their own species. Their very nature seems changed by this heartless persecution; or, recognizing the purpose of man's invasion, they intelligently and deliberately attempt to thwart his purposes by destroying the prize he covets. Such is the influence man exerts over these intelligent and persecuted birds, instead of making friendly advances to them, and by kindness encouraging in them their naturally docile and amiable propensities. How strongly in contrast is this with the pleasant sight at Geneva, Switzerland, where happy crowds of visitors delight in giving crumbs to the friendly gulls that flock about the bridges, feeding almost from the very hands of the people! There is no reason why the gulls, terns, herons, and other water-birds should not constitute one of the chief attractions at our seaside resorts, enlivening them with their grace and beauty.

In regard to the profits of the 'egging business,' I doubt if even the most successful 'egger' can make as much money as he would have done had he stuck to his regular and much more praiseworthy occupation. The quality of wild bird's eggs is inferior to that of the eggs of the domestic fowl, and consequently their price is low, and frequently barrels of them are thrown away as unsalable. This destruction, therefore, has no excuse in necessity as a source of food-supply.

If a tithe of the truth were known throughout the country at large, concerning the sacrifice of bird-life in the names of 'business,' 'enterprise,' 'food,' 'sport,' and what not, from Maine to Mexico, and from California to Alaska, there would be such a cry of remonstrance as would make the bird-destroyers hang their heads for shame.

Another fact not generally known beyond the

scene of its occurrence, relating, however, to the destruction of young birds, rather than to eggs, may be here stated, which for devilish 'enterprise' exceeds any thing that has ever come under my notice. In 1877, and also in 1878, while studying the birds about Corpus Christi Bay, Texas, I examined a low grass-flat called Pelican Island, so named on account of the numbers of brown pelicans that had for years taken it for their breeding-place, to the exclusion of all other species. Here many thousands of these great birds were tending their eggs and young, breeding in such numbers that one could step or jump from nest to nest, over nearly, if not quite, every square yard of the island. Four years later I cruised over the same course, and noticed that the pelicans had deserted this grassy island entirely, and were scattered, in diminished numbers, on other islands which were not occupied by them when I made my former trips. On inquiring into the cause of this change, I learned from prominent citizens, that two or three enterprising (?) men had conceived the idea of making their fortunes from pelican-oil, and had erected 'trying-out' shanties on the mainland. They went to the island in question in large boats, and carried off cargoes of young pelicans in all stages of growth, and boiled them up for their oil. The only satisfaction I could get from the history of this experiment was, that the men could not sell the oil, and had nothing but their nefarious labor for their pains. Think of the enormous sacrifice of life for a foolish experiment! This heartless slaughter is hardly equalled in cruelty by the so-called sport of the union troops during the war against secession, who, while idly lying in transports off the passes along the coast, amused themselves by fastening a fish to a plank which was so weighted as to be quite submerged: they would then watch the pelicans dive for the fish, while bets were freely interchanged as to the probability of the bird getting a broken neck, with the odds decidedly in favor of the death of the pelican. Instances without number might be given to show that man, unchecked by law, will ruthlessly destroy the very things most useful to him if preserved and protected.

The question may be asked, What are pelicans, cormorants, gulls, terns, and herons good for? It may be answered, If for nothing else, they are good to look at and to give life and beauty to the shores and bays. They most assuredly do no harm: on the contrary, they are the scavengers of the shoal waters of our shores, as the buzzards are of the land; and if it were not that the water-birds keep in check the superabundance of almost valueless fishes and other animals that multiply in

prodigious numbers in the shallow waters, especially in warm climates, such a stench would arise from the excess which would necessarily be washed up on the shores, that all human existence about the bays would be out of the question. Nature admirably provides a check to an oversupply, as well as a protection to those weak in numbers, and, if mankind interferes too much with the harmony, retribution will surely follow. Many of our birds are fast going the way of the bison, never to return. If men were not held in check by public opinion and the necessary laws, our land would soon be as barren of all animal life as are the plains of bisons. In our greed, destructiveness, and lack of thought for our future comfort and happiness, we are not so very far in advance of the South-Sea islander, who plants his cocconut, and has not the patience to let it grow, and yield a thousand-fold, but soon digs it up and eats it, fearing lest he lose it altogether, and then wonders why other islands are more favored than his own. GEO. B. SENNETT.

THE RELATION OF BIRDS TO AGRICULTURE.

THE utility of the so-called insectivorous birds — by which are commonly meant species which feed almost exclusively upon insects, like wood-peckers, fly-catchers, swallows, vireos, warblers, and, in less degree, the thrushes — has never been seriously questioned. The extent, however, to which other species subsist upon an insect-diet is not generally known or even suspected. Recent investigations respecting the food-habits of many of our birds show some surprising results, highly favorable to the species investigated. It has been found, for example, that all birds are to a large degree insectivorous, including hawks and owls, and even plovers and sandpipers. Professor Aughey, in his report on the food of the birds of Nebraska, published in one of the reports of the U. S. entomological commission, calls special attention to the importance of not only these birds, but the different species of the grouse family, as a check upon the grasshopper-scurge.

The great importance of the smaller birds in general, including the song-birds, as a check upon the undue increase of insect-life, and consequently the desirability of their strenuous protection, being well-nigh universally conceded, attention will be briefly called to certain species hitherto more or less generally under ban as injurious to agriculture, and whose destruction is considered praiseworthy. Foremost in this category are hawks, owls, crows, and jays. The robin, the brown-thrasher, the catbird, the chewink, and the various

kinds of blackbirds, are also excluded from protection under the bird-laws of most of the states. Crows are accused, with some justice, of depredations upon the young corn, and of now and then robbing a stray hen's nest, or of gobbling up a young chicken. These last enumerated misdemeanors are exceptional, too rare even to require formal notice. The depredations upon the young corn are easily guarded against, as a small quantity of grain thrown upon the ground is greatly preferred by the crows to the few kernels they can acquire by pulling that which has been planted. Many farmers, indeed, consider it much more to their interest to feed the crows for a few days than to destroy them, recognizing the fact that at all other times they are among their best allies; their food consisting largely of grasshoppers, cut-worms, and other noxious insects. Why the jays have been tabooed is hard to explain, their pilferings being at most of a trivial character, while, as destroyers of noxious insects, no birds, it may be safely said, are more important. The other species named above (aside from the hawks and owls) are well known to levy tribute on the small fruits of the garden, the robin particularly, to a somewhat serious extent; while the catbird, brown-thrasher, and chewink not unfrequently pull the corn planted near the thickets they inhabit. Otherwise these species are among the most useful of our birds, whose services are to such an extent recognized, that opinion is divided — even among those who suffer most from their depredations — on the subject of whether or not they are, during the short period of the fruit-season, to be treated as outlaws. In certain portions of the country, particularly in the south, the depredations of the blackbirds upon the grain and rice-fields are of serious character; but throughout at least three-fourths of the states there is certainly no good reason for destroying these otherwise useful birds.

Hawks and owls, from time immemorial, have been treated as foes, and legitimate targets for the rifle or shot-gun on all occasions; their destruction having been not unfrequently encouraged by the offer of bounties from the public treasury for their heads. Of late, frequent protests have been raised against this indiscriminate slaughter. These protests come mainly from ornithologists who have studied their food-habits, and become convinced that their destruction is not only unnecessary, but unwise. A number of published protests might be here cited, did space permit, based on actual knowledge of the facts in the case, and giving statistics of the contents of stomachs of many examples of different species of birds of prey. Only a few of the statistics at hand can

be here presented. Mr. B. H. Warren, a well-known ornithologist, in a paper entitled 'What hawks eat,' published in a recent report of the Pennsylvania board of agriculture, states, respecting the red-tailed hawk (*Buteo borealis*), — the 'hen-hawk' *par excellence* of eastern North America, — that an examination of the stomachs of one hundred and one examples of this species "revealed in eighty-one chiefly mice and small quadrupeds, also some small birds; nine, chickens; three, quail; two, rabbits; one, a part of a skunk; one, a red squirrel; one, a gray squirrel; three, snakes." In the stomachs of thirty-four red-shouldered hawks (*B. lineatus*) examined were found, in twenty-three, mice, small quadrupeds, grasshoppers, and coleopterous insects; in nine, frogs and insects; in the remaining two, small birds, hair, and orthopterous insects. Of twelve broad-winged hawks (*B. latissimus*), four contained mice; three, small birds; four, frogs; one, crayfish and insects. The contents of the stomachs of twenty-nine sparrow-hawks (*Falco sparverius*) was, in fifteen cases, principally mice with traces of various insects; in six, grasshoppers; in two, coleoptera and grasshoppers; two, meadow-larks; four, sparrows. Nine rough-legged hawks (*Archibuteo lagopus sancti-johannis*) examined had all fed exclusively upon field-mice. Of eleven marsh-hawks (*Circus hudsonius*), the stomachs of five contained mice; of two, small birds; of three, frogs; the other, grasshoppers and rabbit's hair.

The hawks of the genus *Accipiter*, on the other hand, present a bad record; fourteen out of twenty-four Cooper's hawks (*A. Cooperi*) being found to contain chickens, seven others, birds, and three, only mice and insects. Of sharp-shinned hawks (*A. velox*), four out of fifteen contained chickens; nine, small birds; one, mice; and one, insects. On the other hand, it is known that several other species of the hawk family feed almost exclusively upon insects, mice, snakes, and frogs.

Careful examination of the contents of stomachs of owls, of which the results have been published, show that field-mice constitute their principal food, and that grasshoppers and other insects enter largely into the diet of all the smaller species. The larger species add to their usual fare of mice and the smaller mammals, many grouse and rabbits.

In short, enough is known of the regimen of our rapacious birds to show that they are only exceptionally harmful to the farmer; their infrequent raids — mostly by a few species — on the poultry being much more than offset by their destruction of mice, grasshoppers, and other injurious insects.

In this connection, reference may be appropri-

ately made to the letters from farmers and fruit-growers, as well as bird-lovers, from various parts of the country, addressed to the committee of the American ornithologists' union on bird-protection, detailing the vast injury they recognize as resulting to agriculture from the present wholesale slaughter of birds. An extract from a letter from a farmer in Dexter, Mich., will indicate the general purport of these communications. "The destruction of birds has been and is carried on here to such an extent that it is hardly possible to raise any kind of fruit; even the grapes, as well as the apples, being too wormy for use or sale. Boys, and even sires of families, but not men, go out and shoot swallows, robins, larks, etc. It makes no difference if they are nesting; and many a nest of young birds have starved on account of their parents being shot. And the small boy with his sling-shot destroys many — and all for the desire to murder. . . . There is a law to prohibit all this; but those who could enforce it take no interest in the matter. Not a single person saves the skins for gain: the birds are thrown away, or left where they fall. I have protested against the cruelty, but to no purpose, except in a few instances. The game and bird laws should be enforced by men appointed for the purpose, who should receive a salary, so that they may make it a business."

BIRD-LAWS.

MOST of the states and territories have on their statute-books laws for the protection of game and fish, regulating the season of hunting and fishing, and providing penalties for the taking of game or fish during certain portions of each year, or, in particular cases, for a series of years. These laws are intended, in most cases, to give protection to 'useful' birds, in addition to the game-birds, and their nests and eggs, at all seasons. In general, these laws are crude and unsatisfactory so far as they relate to supposed useful birds, and also in relation to many others which are either protected merely during certain months, or not at all, as is the case with many of the marsh and shore inhabiting species, such as the herons, terns, gulls, etc. Most of the laws exclude from protection all hawks and owls, crows, jays, and black-birds, and, in some cases, robins and other kinds of song-birds, woodpeckers, etc. A few of the laws make provision for collecting birds and their eggs for scientific purposes, often in a lax way, but occasionally, as in Maine, with considerable stringency; while the new bird-law of New Jersey prohibits the destruction of song-birds, their nests or eggs, for any purpose whatever. Defective as

the present laws now generally are, they would, if thoroughly enforced, prevent the disgraceful slaughter now so general, and untrammelled by any legal interference. As already so many times reiterated in this series of papers, the fault is not so much lack of laws, or inadequate legislation, as the absence of nearly all effort to interpose any obstacles, legal or otherwise, in the way of free slaughter. So apathetic is the public in all that relates to bird-protection, that prosecution under the bird-protection statutes requires, on the part of the prosecutor, a considerable amount of moral courage to face the frown of public opinion, the malignment of motive, and the enmities such prosecution is sure to engender.

None of the bird-laws are above improvement, even in so far as they relate to the protection of game-birds; but, in respect to the non-game birds, nearly all require more or less change. If possible, it would be well to have uniform laws throughout all the states and territories, varying only in respect to the time of the close season, and such other points as difference of season, kind of game to be especially protected, etc., according to local conditions. At present, certain birds are protected in some states which are outlawed in others, or are treated as game-birds in some, and not so treated in others.

Birds, as regards legislation, may well be divided into two classes, — game-birds, and birds which are not such; and the laws relating to each class should be separate and distinct. The game-birds should be left to the care of sportsmen and game-protective associations, since self-interest on the part of the more intelligent sportsmen will dictate more or less wise legislation for the preservation of the birds on which their sport depends. But in respect to game-birds, public opinion should be so far enlightened as to secure the enforcement of proper legislative enactments; which is notoriously not the case at present. All other birds should be left to the care of bird-lovers and humanitarians, who should see that proper laws for their preservation are not only enacted, but duly enforced. As already shown in preceding pages of this *Supplement*, those who know best, from having scientifically investigated the subject, are convinced that none of our native birds should be outlawed as unqualifiedly, or even to any serious degree, injurious. A few exceptions might be made, were it practicable; but, in the general ignorance of legislators and of the public generally, — or their inability to make proper distinction through inability to recognize by proper names one kind of hawk, for instance, from another, — the safe way is to attempt no such discrimination in legislation. The slight harm resulting from

protecting half a dozen species more or less harmful would be more than offset by the indiscriminate destruction which would necessarily result from such a loophole.

The reason for keeping legislation respecting game-birds distinct from that relating to the other species is mainly to avoid conflict of interests respecting such legislation, which is more or less sure to follow in any attempt at combined legislation respecting all birds in one act. Sportsmen's clubs and game-protective associations in attempting to provide proper game-laws often find strong opponents in the game-dealers and market-gunners, who often succeed in defeating judicious legislation. If all birds are treated under the same act, attempts to improve the portions of such acts as relate to useful birds are often prevented through opposition to certain clauses of the game-sections obnoxious to pot-hunters and game-dealers, as has recently been the case with attempted judicious amendments to the bird-laws in the state of Massachusetts.

There should also be some provision for collecting birds, their nests and eggs, for scientific purposes, in behalf of our natural history museums and of scientific progress in ornithology. As already shown in these articles, the birds destroyed in the interest of science, notwithstanding the outcry to the contrary from certain sources, are relatively few in comparison to the number destroyed for millinery and other mercenary purposes, — so small as not to materially affect the decrease of any species. But such license, unless rigidly guarded, is liable to abuse, and should be hedged about with every practicable safeguard. The number of such licenses issued in any state should be very small; they should be granted with strictest regard to the fitness of the recipient to be allowed such a favor; and their abuse or misuse made a misdemeanor subject to severe penalties. Obviously, the power to grant them should, so far as possible, be vested in persons having some knowledge of ornithology, or who are able to recognize the difference between collecting birds for scientific purposes and as 'curiosities,' or for traffic other than strictly in the interest of science. It should be further understood that these licenses grant no immunity from the ordinary laws of trespass, or laws against the use of fire-arms at improper times or places, or in violation of any of the provisions of game-protective acts. The system of issuing such licenses has needlessly been brought into disrepute through the gross ignorance and apathy of the general public as to their real purpose and limitations. For most of the abuses of the system there is already abundant remedy. Any person holding

such a license, who uses it as a shield against prosecution for illegal or indiscriminate slaughter of birds for any and all purposes, is successful only to such extent as the ignorance or apathy of the community among which his misdeeds are committed happen to give him immunity. The fault is not in reality chargeable to the law, or the system permitting the granting of certificates for scientific collecting. In this matter, as in all else relating to bird-destruction, all that is necessary to prevent abuses is a proper comprehension of the laws relating to the subject, and a public sentiment not only favorable to their enforcement, but watchful against any infringement of their provisions.

With a desire to bring about more intelligent, uniform, and desirable legislation for the protection everywhere, and at all times, of all birds not properly to be regarded as game-birds, the American ornithologists' union committee on bird-protection have had under careful consideration a draught of a bird-law drawn with special reference to its fitness for general adoption throughout the United States and the British Provinces, and with regard to just what birds should be so protected. It is intended as a guide or model, which may serve as a basis for legislation. From its pertinence in the present connection, it is given below in full. Possibly some additional provisions may still be desirable, relating especially to the designation of certain officers to secure its strict observance, the amount of the fine, and whether or not a part of the fine should go to the complainant, — features, however, that doubtless may be safely left to legislative discretion.

[AN ACT FOR THE PROTECTION OF BIRDS AND THEIR NESTS AND EGGS.]

SECTION 1. — Any person who shall, within the state of —, kill any wild bird other than a game-bird, or purchase, offer, or expose for sale any such wild bird, after it has been killed, shall for each offence be subject to a fine of five dollars, or imprisonment for ten days, or both, at the discretion of the court. For the purposes of this act the following only shall be considered game-birds. The Anatidae, commonly known as swans, geese, brant, and river and sea ducks; the Rallidae, commonly known as rails, coots, mud-hens, and gallinules; the Limicolae, commonly known as shore-birds, plovers, surf-birds, snipe, woodcock, sandpipers, tattlers, and curlews; the Gallinae, commonly known as wild turkeys, grouse, prairie-chickens, pheasants, partridges, and quails.

SECTION 2. — Any person who shall, within the state of —, take or needlessly destroy the nest or the eggs of any wild bird, shall be subject for each offence to a fine of five dollars, or imprisonment for ten days, or both, at the discretion of the court.

SECTION 3. — Sections 1 and 2 of this act shall not apply to any person holding a certificate giving the right to take birds, and their nests and eggs, for scientific purposes, as provided for in section 4 of this act.

SECTION 4. — Certificates may be granted by [here follow the names of the persons, if any, duly authorized by this act to grant such certificates], or by any incorporated society of natural history in the state, through such persons or

officers as said society may designate, to any properly accredited person of the age of eighteen years or upward, permitting the holder thereof to collect birds, their nests or eggs, for strictly scientific purposes only. In order to obtain such certificate, the applicant for the same must present to the person or persons having the power to grant said certificate, written testimonials from two well-known scientific men, certifying to the good character and fitness of said applicant to be intrusted with such privilege; must pay to said persons or officers one dollar to defray the necessary expenses attending the granting of such certificates; and must file with said persons or officers a properly executed bond, in the sum of two hundred dollars, signed by two responsible citizens of the state as sureties. This bond shall be forfeited to the state, and the certificate becomes void, upon proof that the holder of such a certificate has killed any bird, or taken the nest or eggs of any bird, for other than the purposes named in sections 3 and 4 of this act, and shall be further subject for each such offence to the penalties provided therefor in sections 1 and 2 of this act.

SECTION 5. — The certificates authorized by this act shall be in force for one year only from the date of their issue, and shall not be transferable.

SECTION 6. — The English or European house-sparrow (*Passer domesticus*) is not included among the birds protected by this act.

SECTION 7. — All acts, or parts of acts, heretofore passed, inconsistent with or contrary to the provisions of this act, are hereby repealed.

SECTION 8. — This act shall take effect upon its passage.

AN APPEAL TO THE WOMEN OF THE COUNTRY IN BEHALF OF THE BIRDS.

THE relation of the women of the country to the present lamentable destruction of bird-life has been several times alluded to in the foregoing pages; but the matter is so important, it demands more formal notice in the present connection. The destruction of millions of birds annually results from the present fashion of wearing birds on hats and bonnets. The women who wear them, and give countenance to the fashion, have doubtless done so thoughtlessly, as regards the serious destruction of bird-life thereby entailed, and without any appreciation of its extent or its results, considered from a practical stand-point. Until recently, very rarely has attention been called to the matter, or the facts in the case been adequately set forth. They have therefore sinned, for the most part, unwittingly, and are thus not seriously chargeable with blame. But the case is now different, and ignorance can no longer be urged in palliation of a barbarous fashion. Obviously it is only necessary to call the attention of intelligent women to the subject, as now presented, to enlist their sympathies and their efforts in suppression of the milliner's traffic in bird-skins. As a recent writer (Mr. E. P. Bicknell, secretary of the A. O. U. committee on bird-protection) in the *Evening post* of this city has not only forcibly appealed to the women in behalf of the birds, but suggested to them certain desirable lines of action, this brief reference to the subject

may well be concluded with a few pertinent extracts from the article in question.

"So long as demand continues, the supply will come. Law of itself can be of little, perhaps of no ultimate, avail. It may give check; but this tide of destruction it is powerless to stay. The demand will be met; the offenders will find it worth while to dare the law. One thing only will stop this cruelty, — the disapprobation of fashion. It is our women who hold this great power. Let our women say the word, and hundreds of thousands of bird-lives every year will be preserved. And, until woman does use her influence, it is vain to hope that this nameless sacrifice will cease until it has worked out its own end, and the birds are gone. . . . It is earnestly hoped that the ladies of this city can be led to see this matter in its true light, and to take some pronounced stand in behalf of the birds, and against the prevailing fashions.

"It is known that even now birds are not worn by some, on grounds of humanity. Yet little is to be expected from individuals challenging the fashion: concert of action is needed. The sentiment of humanity once widely aroused, the birds are safe. Surely those who unthinkingly have been the sustaining cause of a great cruelty will not refuse their influence in abating it, now that they are awakened to the truth. Already word comes from London, that women are taking up the work there. Can we do less? It needs only united action, sustained by resolution and sincerity of purpose, to crush a painful wrong, — truly a barbarism, — and to achieve a humane work so far-reaching in its effects as to outswEEP the span of our own generation, and promise a blessing to those who will come after."

There are already in England, it may be added, two societies organized expressly in aid of the preservation of birds 'in Great Britain and all other parts of the world.' The Selborne society, originated by George Arthur Musgrave of London, appeals to Englishwomen "to forswear the present fashion of wearing foreign or English bird-skins. Our countrywomen are asked to inaugurate a return to a mode which, though half forgotten now, is assuredly more becoming to the wearer than trophies of robins and sandpipers." Lady Mount Temple is not only a member of the plumage section of the Selborne society, but has written a vigorous protest against the fashion of wearing dead birds on dresses, bonnets, and hats. The section is under the patronage of her Royal Highness the Princess Christian of Schleswig-Holstein, and numbers among its membership twenty ladies of title, and also Lord Tennyson, Robert Browning, Sir Frederick Leighton, and Rev. F. O. Morris.

THE AMERICAN ORNITHOLOGISTS' UNION COMMITTEE ON BIRD-PROTECTION.

The American ornithologists' union committee was recently organized in New York city with the following membership: Mr. George B. Sennett, chairman; Mr. Eugene P. Bicknell, secretary; Mr. William Dutcher, treasurer; Mr. J. A. Allen, Dr. J. B. Holder, Dr. George Bird Grinnell, and Mr. L. S. Foster, all of New York city; Mr. William Brewster, Cambridge, Mass.; Mr. Montague Chamberlain, St. John, N.B.; Col. N. S. Goss, Topeka, Kan.

The committee is desirous of collecting facts and statistics bearing upon the subject of the destruction of our birds, and will welcome information from any source. It also extends the promise of its hearty co-operation to all persons or societies who may be interested in the protection of birds.

The headquarters of the committee are at the American museum of natural history, Central Park, New York city, where the officers or any of the members may be addressed.

The Third report of the Cornell university experiment-station, 1883-84 and 1884-85 (Ithaca, N. Y., *Andrus & Church*, 1885, 39 p., 8"), contains an account of work done in the years 1883-85 chiefly by Professors Roberts and Caldwell. Although the experiments are comparatively simple, and show plainly that they were made in the intervals of other duties, they still show a degree of insight and accuracy in plan and execution, and are reported with a clearness of statement which we sometimes look for in vain in more pretentious reports. We may mention particularly Professor Roberts's determinations of the value of stable-manure, and Professor Caldwell's comparisons of the chemical composition and nutritive effect of certain rations for cattle. The subject of the first-named experiment is one which has usually been treated deductively, and hence these experiments are of interest not only in their direct application to farm practice, but because they serve to a certain extent to justify the deductions of science. The feeding-experiments show the uncertainty attaching to the use of the so-called 'feeding-standards' or 'standard rations' which have been somewhat widely recommended by writers on agricultural science. Evidence seems to be accumulating that these standards, in their present form, are very uncertain guides, and that, even if not based on false premises, they require great modifications before they can be made of much use to those most needing the information.

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